

Amendments to the Abstract:

A plasma processing method using a plasma processing apparatus having a process chamber in which a substrate is subjected to a plasma processing, a light-receiving part, a spectrometer unit, an arithmetic unit, a database, a determination unit for determining that an end point of seasoning is reached as a condition of the process chamber, and an apparatus controller. The method includes the steps of converting a multi-channel signal output from the spectrometer unit into a batch of output signals, finding differences between the output signals and output signals of a preceding batch, determining the average value of the differences in one batch, the difference between the maximum and the minimum of the differences in one batch and the standard deviation of the differences in one batch, and comparing the determined values with a preset threshold.